



ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING REPORT

FOR

THE PROPOSED AQUACULTURE PARK WITH RAS PROJECT AT

AGRICULTURAL TRAINING CENTRE, MATAYOS SUB COUNTY, BUSIA COUNTY.



BURUMBA COMMUNITY PROJECT MANAGEMENT COMMITTEE.

P.O. BOX 392-50400

BUSIA

JUNE 2022

CERTIFICATION

We do hereby submit an Environmental and social impact assessment report for the proposed **Aquaculture Park project**. To our knowledge all information contained in this report is accurate and a truthful representation of all findings as relating to the proposed project as per project description by the proponent.

PROPONENT

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LIST OF ACRONYMS

CGB- County Government of Busia
CIDP- County Integrated Development Plan
EA -Environmental Assessment
EIA -Environmental Impact Assessment
EMCA -Environmental Management Act, Cap 387
EMP- Environmental Management Plan
ESIA -Environmental and Social Impact Assessment
ESMS -Environmental and Social Management System
ESSF -Environmental and Social Screening Form
IP -Indigenous People
KCSAP- Kenya Climate Smart Agriculture Programme
NCA- National Construction Authority
NEC -National Environment Council
NEMA- National Environmental Management Authority
OP- Operational Procedure
OS -Operational Safeguards
OSHA- Occupational Safety and Health Authority
PBO- Project Based Programs
RAP -Resettlement Action Plan
RAS- Recirculating Aquaculture Systems
PIU -Project Implementation Unit
ToR -Terms of Reference
UN -United Nations
WB- World Bank
WIBA- Work Injury Benefit Authority
WRA- Water Resource Authority

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EXECUTIVE SUMMARY

This Environmental, Social, Management and Monitoring presents the outcome of an Environmental and Social Impact Assessment for Aquaculture Park with RAS (Recirculating Aquaculture Systems) Project proposed by Burumba Project Management Committee. The park will be located at Agricultural Training Centre (ATC), Matayos Sub County and will be funded by World Bank through KCSAP, County Government of Busia and the beneficiaries. The total Male beneficiaries are 3500 people and Female beneficiaries: 3300 people. Direct beneficiaries: 350 i.e Male: 212, Female: 138; Indirect beneficiaries: 5450 i.e. Male: 2950, Female 2500; Vulnerable beneficiaries (poor, widows/widowers, orphans, physically challenged, elderly, HIV/AIDs affected/infected: 1000 i.e Male: 450 Female: 550.

This project has been assessed as a low impact project and hence requiring only an ESMMP. It has also been prepared in accordance with Section 58 to Section 67 and Section 138 of the Environmental Management and Coordination Act Cap. 387. The subsidiary legislation to the Act, the Environmental (Impact Assessment and Audit) Regulations, 2003 provides the framework for carrying out Environmental and Social Impact Assessments (ESIAs) and Environmental Audits (EAs) in Kenya by experts registered and licensed by the Authority. The act requires that for such projects an Environmental and Social Impact Assessment (ESIA) must be undertaken. In addition this project being a World Bank funded project, it has triggered OP 4.01 – Environmental Assessment and thus preparation of Environmental and Social Impact Assessment.

The purpose of this project are to increase agricultural productivity, improve incomes and diversify income and nutrition. This will be through increasing the value of aquaculture production from the present farm gate average value of Kshs 200 million to at least Kshs 1 Billion annually by 2022; increasing the volume of aquaculture production from 1,080 tons to 4,300 tons annually by 2022; improving fish production by construction of 70 fish ponds in the sub county

The approach was participatory and consultative in nature targeting stakeholder's consultations and public participation. The EIA team carried out the assessment using a combination of methods including ground surveys; review of the project-related documents; and interviews with key stakeholders; they included project neighbors, project management team and other interested people and parties of the proposed project. The results of the consultations will be adequately reflected in the project design and in the project documentation.

Potential beneficial and adverse environmental and social impacts associated with the proposed project were identified and discussed. The main positive contribution of the proposed is promotion of fish production. Other benefits include: food security, creation of employment opportunities, revenue to the governments, increased demand for raw materials, improved aesthetics, optimal use of land and development in the area. A summary of these potential negative environmental and social impacts and a brief description of their mitigation measures is provided in table I below.

Table 1.0: Summary of potential negative environmental impacts

Area of concern /impacts	Proposed mitigation measures
Environmental degradation due to construction activities such as vegetation clearing, excavation and compaction and accidents	<ul style="list-style-type: none"> • Do not remove vegetation indiscreetly/ re-vegetate areas affected • Provide workers with PPE and easy access into excavated pits • Provide warning signs /signage of work in progress • Supervision of construction by qualified engineers
Pollution of water from organic fish waste discharge	<ul style="list-style-type: none"> • Monitor fish feeding behavior and feed only when necessary
Chemical pollution resulting from the use of chemical therapeutants and antifoulants	<ul style="list-style-type: none"> • Use only approved veterinary chemicals and therapeutants and antifoulants • Where effective use environmentally friendly drugs alternatives and drugs delivery system
Increased demand on water resources	<ul style="list-style-type: none"> • Using large water storage containers and have a back up to cope with potential water shortages
Solid wastes	<ul style="list-style-type: none"> • Segregate ,contain and encourage reuse of solid waste • Regular collection and disposal of wastes to avoid accumulation at the site
Flooding of ponds	<ul style="list-style-type: none"> • Embankments and drain out be provided around the ponds to prevent entry of flood water into the fish ponds
Land contamination	<ul style="list-style-type: none"> • Use crushed limestone to disinfect contaminated soils
Degradation of air quality	<ul style="list-style-type: none"> • Properly aerate the facility to minimize foul smell build up
Health, hygiene and safety	<ul style="list-style-type: none"> • Fish feed handlers and cleaners should always wear protective clothing
Social disturbance	<ul style="list-style-type: none"> • Maximize use of local labour for unskilled positions
Insecurity	<ul style="list-style-type: none"> • Fence the site to prevent intruders, predators and unauthorized personnel

The ESMMP will be shared with the contractor selected for implementation

Project Budget

The total project cost is divided into three major components; ponds construction, fencing, power dropping and CCTV installations costing 30M, installation of the Recirculatory Aquaculture System is estimated to cost 45M and offices and training hall estimated to cost 8M. the total estimated cost of the project is estimated at 83,000,000 /=. The total costs for implementing the ESMP is Kenya shillings 2,613,000.00

CHAPTER ONE: INTRODUCTION

1.1 Background

The project entails construction of fish ponds, fencing and auxiliary facilities,

The objectives of the project are to

- i.** Create self-employment opportunities
- ii.** To improve livelihood of the local youths – more money in their pockets, safe the youth from the engaging and improved diet.
- iii.** To contribute to increase in value of aquaculture production from the present farm gate average value of Kshs 200 million to at least Kshs 1 Billion annually by 2022.
- iv.** To improve fish production by construction of 100 fish ponds in the sub county

The Department of Agriculture through the directorate of Fisheries, in Busia County through the Kenya Climate Smart Agriculture (KCSAP) seeks to enhance food production in the county through proper methods that in turn enhance environmental protection and conservation.

1.2 Justification for the Aquaculture Park project

The proposed project contributes to the KCSAP project development objectives by increasing the production per unit of land and enhancing the capacity of the farmers to produce adequate and marketable fish produce throughout the year through fish farming. The project offers employment opportunities to members of the community during construction and operation phases of the project implementation.

1.3 Objectives of the ESMMP

The principal objective of this ESMMP is to highlight the possible positive and negative environmental and social impacts expected during the establishment and operation of the proposed project, with the aim of proposing the possible mitigation measures to the negative impacts. The ESMMP identified the possible environmental impacts during the construction, operation and decommissioning phases.

In brief, the specific objectives of the study were to:

- i.** Describe the proposed project including the technology to be used.
- ii.** Identify impacts, both positive and negative, the direct, indirect, cumulative, irreversible, short- term and long-term effects anticipated; and identify mitigation measures.
- iii.** Prepare a comprehensive Environmental and Social Management and Monitoring Plan (ESMMP)

1.5 Methodology

The EIA team first undertook environmental screening and scoping to avoid unnecessary data. The report applied an inter alia approach incorporating environmental, social, cultural, economic, safety and health impacts of the project. The integrated nature of the impacts review ensured all possible negative impacts were identified by stakeholders and beneficiaries and adequately mitigated. Given that nature and magnitude of the proposed Aquaculture Park project, this ESMMP was opted for to ensure comprehensiveness and completeness of the assessment. The phases of this study included the following

1.5.1 Environmental Screening

Environmental screening was carried out by the lead expert and Burumba Project Management Committee. The results are that the proposed Construction of the aquaculture park project lies within Category (1) **Low Risk Projects**. This is because the screening process revealed that anticipated environmental issues would be minimal.

1.5.2 Desktop Study

Desktop study included documents review. Key documents reviewed included the following: Kenya policies, strategies and guidelines; National and County laws and regulations; applicable Multilateral Environmental Agreements (MEAs) and World Bank policies safeguards.

1.5.3 Physical Inspection of the Site and Surrounding

Physical inspection of the proposed site which included field investigation at site and surrounding areas was done using a screening sheet (copy available in annexes) on 4th March 2022. The field investigations were meant for physical inspections of the site characteristics and the environmental status of the surrounding areas to determine the anticipated impacts from the project.

1.5.5 Data Analysis and Documentation

The ESMMP was compiled from the findings in accordance with the EIA guidelines issued by NEMA for ESMMP. The Consultant ensured constant briefing of the proponent during the exercise. The exercise culminated with the production and documentation of this summary project report designed to ensure that the proposed development complies with the Environmental Management and Coordination Act (EMCA, Cap 387).

CHAPTER TWO : PROJECT DESCRIPTION

2.1 Introduction

The section gives the project location and description of the physical and socio-economic environments of the proposed project area.

2.2 Location of the project

The proposed project site is located in Burumba Ward within the Matayos Sub County in Busia County with GPS Coordinates of $0^{\circ}27'13.00\text{N}, 34^{\circ}06'44.00\text{E}$.



2.3 Land Ownership

The project site is located in a public land, within Busia Agricultural Training Centre which is in the custody of County Government of Busia.

2.4 : Project description

The aquaculture project involves excavation of 45 ponds with the following:

- Fencing of the project site with chain-link wire
- Installation of CCTV
- Stocking of the ponds with fingerlings
- Construction of a small office
- Recirculating aquaculture system

CHAPTER THREE: POTENTIAL IMPACTS AND MITIGATION MEASURES

3.1 Introduction

The environmental and social baseline information collected and the project characteristics discussed forms the basis for impact identification and evaluation. The proposed project will bring about both positive and negative impacts on the environment and the community at large. The impacts that are expected to arise from the proposed project have been identified and discussed in regard to all phases of the proposed project cycle; construction, operational and decommissioning. The negative impacts will be minimal and will only last for the time of construction phase, with a few lasting for a long time during the operation phase.

3.2 Impacts during the construction phase

3.2.1 Anticipated positive impacts

The anticipated positive impacts during the construction phase include the following:

i) Creation of employment opportunities

This project will involve both skilled and unskilled workers during implementation. They range from environmental experts, land surveyors, aqua culturists, engineers and the laborers of about 20 – 30 people. Indirect employment will be created where suppliers of foodstuffs and other goods and products will gain income by supplying their services and products to the construction site. The community members will provide labor for site clearing, digging of the fishponds, loading and offloading of construction materials provision of security at the site among others.

ii) Creation of market for construction material

The project will result to an increased demand for construction material for this type of project. This demand will in turn create market for utilization of the materials.

3.2.2 Anticipated negative environmental impacts

The anticipated negative impacts during the construction phase include the following:

i) Impacts on flora and fauna

The impacts on vegetation and animals will be born from removal and disturbance of vegetation, movement of people and machinery, excavation and compaction. Most of these impacts are short-lived and localized. Plants at the proposed site will be cleared to pave way for the construction activities and when creating access roads and sites for storage of construction materials. This may also affect the fauna that is mainly the insects that live on the plants at the proposed site. Excavation just like clearance of vegetation alters and/or destroys habitats of organisms.

Proposed Mitigation measures

- Vegetation removal will be restricted to the actual project area to avoid spill-over effects to neighboring areas.
- Encourage re-vegetation.

ii) Impacts on soil and water resources

Ponds require deep excavation occasioning removal of top soils. The excavation works will expose the soil to soil erosion. Eroded soil silts water bodies and can flood downstream areas.

Proposed Mitigation measures

- a) Construct drainage works for storm in adherence to the Public Works specifications.
- b) Rip off compacted areas in areas where compaction will have adversely affected after construction to allow aeration of soil and ease infiltration of water into the soil.

iii) Solid wastes

During the construction phase, there will be excavations at the site. Construction wastes including excess excavated soils, unusable pieces of construction materials and removed plant material are the main sources of solid wastes. If they are not properly disposed, it results into a nuisance.

Proposed Mitigation measures

- a) Utilize the excavated soil at the site to create the embankments of the fishponds.
- b) Excess soil could be used in filling road potholes among many other uses.
- c) Part of the topsoil excavated from the proposed site can be re-spread in areas to be landscaped within and/or outside the proposed site or farmlands outside the proposed site.

iv) Fire

Fire damage is unpredictable given that the proposed project will not involve a lot of flammable materials. However, if appropriate measures are not put in place, a fire outbreak can occur and cause damage to property and even lead to death.

Mitigation measures

- a) Declare places with flammable construction materials as “NO SMOKING ZONES” and display conspicuous notices of the same.
- b) Train workers and the management on emergency (fire) preparedness and management.
- c) Provide fire extinguishers at the construction site.

3.2.2.6 Increased traffic flow

During construction, there will be an influx of traffic to and from the proposed site. These will include vehicles used in facilitating the construction work and people seeking employment opportunities, workers, managers, environmental inspectors and suppliers of foodstuffs to the construction workers. Though increased traffic during construction is a short-term impact, it has the effect of causing congestion on the road which may subsequently results in accidents on the roads.

Mitigation measures

- a) Properly plan for the transportation of materials to ensure that vehicles are optimally filled in order to reduce the number of trips done or the number of vehicles on the road.
- b) Place clear signage at the gate to alert drivers to be cautious about the construction and to look out for entering and/or exiting vehicles.
- c) Create a parking space and provide adequate space for turning of vehicles at the gate in order to give drivers enough room to maneuver in and out of the site.

3.2.3 Social and health impacts

3.2.3.1 Gender based violence and sexual harassment (GBV/SH)

This impact is triggered during project construction phase when the contractor(s) fail to comply with the following provisions:

- a) Gender Inclusivity requirements in hiring of workers and entire project management as required by Gender Policy 2011 and 2/3 gender rule; and
- b) Failure to protect human risk areas associated with, disadvantaged groups, interfering with participation rights, and interfering with labour rights.

The proposed Mitigation Measures of Human Rights and Gender Requirements are:

- a) Ensure clear human resources policy against sexual harassment that is aligned with national law.
- b) Integrate provisions related to sexual harassment in the employee Code of Conduct.
- c) Ensure appointed human resources personnel to manage reports of sexual harassment according to policy.
- d) The contractor(s) shall require employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with a Code of Conduct with specific provisions on protection from sexual exploitation and abuse.
- e) The contractor shall develop specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to compensation and employment.
- f) The contractor will ensure adequate referral mechanisms are in place if a case of GBV at the community level is reported related to project implementation.

3.2.3.2 Risk of Increased incidences of HIV/AIDS and STIs

The influx of people may bring communicable diseases to the project area, including sexually transmitted infections (STIs), or the incoming workers may be exposed to diseases to which they have low resistance.

Proposed mitigation measure for this are:

- a) Contractor(s) to sensitize workers and community members on HIV/AIDS awareness and other communicable diseases to be instituted and implemented as part of the contractor's Health and Safety Management Plan to be enforced by the Supervising Engineer. This will involve periodic HIV/AIDS and other communicable diseases Awareness Workshops for Contractor's Staff.

3.2.3.3 Risks of increased spread of COVID-19 at work sites

The World Health Organization declared COVID-19 a global pandemic after assessing both its alarming levels of spread and severity, and the alarming levels of inaction. Consequentially, World Health Organization (WHO) issued various guidance and measures to prevent the spread of the virus. The measures have been adopted worldwide.

The proposed Mitigation Measures against spread of COVID-19 amongst workers are:

- a) The contractor(s) shall put in place measures to prevent and manage the spread of the COVID-19.
- b) The contractor(s) will develop a SOPs for managing the spread of COVID-19 during project execution and submit them for the approval of the Supervision Engineer and the Client before mobilization. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions.
- c) Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel.
- d) The project shall put in place means to support rapid testing of suspected workers for COVID-19.

3.2.2.5 Child abuse

Children within the project area will be exposed to risks associated with interaction between them and project workers. This includes child labour and sexual abuse which coherently leads to teenage pregnancies and exposure to communicable diseases such as HIV/AIDS.

Mitigation measures

- a) The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated with the project.
- b) All staff must sign, committing themselves towards protecting children, a contract which clearly defines what is and is not acceptable behaviour.

3.3 Impacts during the operation phase

3.3.1 Anticipated positive impacts

The anticipated positive impacts during the operation phase include the following:

3.3.1.1 Creation of an integrated fish farming project

The integrated fish farming project has the component of a fish hatchery, a fish feeds formulation unit and fishponds. Therefore, the project will be a major source of fingerlings, fish feeds and fish in the area. These will be sold both locally and in other regions in the county and outside the county. The project will provide fish for sale across all the markets, this will boost the farmers' livelihood and improve their social well-being and development in the area. The access to fish will improve nutrition and boost food security in the area. Farmer will also be sure of market for their fish products and even gain more knowledge on climate-smart agriculture.

3.3.1.2 Employment generation

People will be employed to work at the site including security officers, cleaners, managers, marketing persons, hatchery operators, fish feeds formulation personnel among others. These people will earn income and use it to improve their living standards.

Enhancement measures

- a) The Proponent will consider the area resident for most of the job opportunities at the site.

3.3.1.3 Capacity building of the community

The long term benefits of the project will include capacity building targeting local communities, youth empowerment, management of natural resources, fish feeding, value addition and fish processing and entrepreneurial skills.

3.3.2 Anticipated negative environmental impacts

The anticipated negative impacts during the operation phase include the following:

3.3.2.1 Environmental pollution

Fish feeds, hormones and other chemicals used for treatment of fish may contaminate the natural water systems if water from the ponds is drained and released into the natural water systems. The use of fish feeds and excretes in hatcheries and cages will be relatively high and may result in contaminations for the rest of the water systems.

Mitigation measures

- a) Treat such water by providing for and ensuring adequate time for biodegradation of the chemicals used by allowing the water to settle for a minimum of 21 days before being discharged into the environment.
- b) Minimize regular contacts between such waters and the natural water systems.
- c) Ensure frequent water quality monitoring to determine the level of pollution and contamination.

3.3.2.2 Water usage

During operation, water will be used for fish farming, cleaning and washing of the fish, and in preparation of meals. The increased water-use may lead to acute shortages and become a source of conflicts with other members of the community.

Mitigation measures

- a) Provide polite notices to use water wisely at water end-user points.
- b) Regularly maintain plumbing fixtures and water piping to avoid losses due to leakages.

3.3.2.3 Solid wastes

During operation, solid wastes will include food waste and waste packaging material. These may get into the fish feed and affect the fish.

Mitigation measures

- a) Provide bins for separate collection of wastes into appropriate sorts such as recyclable and non-recyclable, general wastes and infectious wastes e.g. used masks and label the collection bins appropriately.
- b) Where possible material considered as waste may be re-used or recycled or be given to who may consider them useful for others uses.
- c) Regularly collect solid wastes and dispose them to prevent accumulation at collection areas.

3.3.2.4 Contamination of fishpond water

Contamination of water in the ponds might result from the run-off from cultivation activities and destruction of spring sources.

Mitigation measures

- a) Protection and conservation of spring sources and vulnerable habitats.
- b) Creation of buffer zones at the spring sources as well as at the pond sites.
- c) Soil and water conservation practices such as afforestation, agro-forestry programmes, terracing, grass planting etc. to minimize run-offs into the fishponds.
- d) Protection of the canals/channels that bring water from the springs e.g. by buffering them to prevent entry of contaminants.

3.3.3 Anticipated health and social impacts

3.3.3.1 Health impact – creation of vector and rodents breeding grounds

If the project commences with no well-designed storm water drains, the rain water may end up stagnating and hence creating conducive breeding areas for mosquitoes and other water based vectors leading to transmission of human diseases like malaria and cholera. The ponds themselves could become a potential breeding ground for mosquitoes if the circulation of water is not regular. Diseases such as malaria and bilharzia may be common place.

Mitigation measures

- a) All hollow areas at the site should be filled with soil to prevent stagnation of water.
- b) The inlet and outlet pipes to the ponds should be properly fixed to ensure regular flow of water which will prevent water from staying in the ponds for a long time.
- c) Bushes and long grass around the fishponds will be cleared to prevent breeding of mosquitoes.

3.3.3.2 Social impact – risks of animals and people drowning in the ponds

Animals and people moving around the ponds could easily fall into the ponds and drown. The entire area will be fenced and will be provided with a lockable gate. This will prevent entry of animals, children and unauthorized people into the fishpond area. Fishponds that will be established in individual farms by the CBO members may suffer theft or become hazardous areas where domestic animals and children may drown.

Mitigation measures

- a) The pond areas will be fenced and will be provided with a lockable gate to keep away animals, unauthorized people and children.
- b) Put warning signs at the fishponds to alert children and other people of the dangers associated with the fishponds.
- c) Grass around the ponds shall always be kept short so that it does not attract grazing animals.
- d) Carry out public awareness and education as a means against accidental deaths by drowning.

3.3.3.3 Gender based violence and sexual harassment (GBV/SH)

This impact is triggered during project operation phase when the Proponent or project management fail to comply with the following provisions:

- a) Gender Inclusivity requirements in hiring of workers and entire project management as required by Gender Policy 2011 and 2/3 gender rule; and
- b) Failure to protect human risk areas associated with, disadvantaged groups, interfering with participation rights, and interfering with labour rights.

The proposed Mitigation Measures of Human Rights and Gender Requirements are:

- a) Ensure clear human resources policy against sexual harassment that is aligned with national law.
- b) Integrate provisions related to sexual harassment in the employee Code of Conduct.
- c) Ensure appointed human resources personnel to manage reports of sexual harassment according to policy.

3.3.3.4 Sexual Exploitation and Abuse by project workers against community members

This impact refers to sexual exploitation and abuse (SEA) committed by project staff against communities and represents a risk at all stages of the project, especially when employees and community members are not clear about prohibitions against SEA in the project.

The proposed mitigation measures to risks of SEA include:

- a) Develop and implement a SEA action plan with an Accountability and Response Framework as part of the ESMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018).

3.3.3.5 Risk of Increased incidences of HIV/AIDS and STIs

The influx of people may bring communicable diseases to the project area, including sexually transmitted infections (STIs), or the incoming workers may be exposed to diseases to which they have low resistance. This can result in an additional burden on local health facilities and resources. Local health and rescue facilities may also be overwhelmed and/or ill-equipped to address the industrial accidents that can occur in a large construction site.

Proposed mitigation measure for this are:

- a) Sensitize workers and community members on HIV/AIDS awareness and other communicable diseases to be instituted and implemented as part of the contractor's Health and Safety Management Plan to be enforced by the Supervising Engineer. This will involve periodic HIV/AIDS and other communicable diseases Awareness Workshops for Contractor's Staff.
- b) Controlled access to private offices and working places by outsiders.

3.3.3.6 Child abuse

Children within the project area will be exposed to risks associated with interaction between them and project staff. This includes child labour and sexual abuse which coherently leads to teenage pregnancies and exposure to communicable diseases such as HIV/AIDS.

Mitigation measures

- a) The Proponent will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated with the project.
- b) Children under the age of 18 years will not be hired at the site as provided by Child Rights Act (Amendment Bill) 2014.

3.3.3.7 Risk of increased spread of COVID-19

During project operation, there will be a lot of interactions among different people at the site. The potential for the spread of any infectious disease like COVID-19 is high.

The proposed Mitigation Measures against spread of COVID-19:

- a) The Proponent shall put in place measures to prevent and manage the spread of the COVID-19.
- b) The Proponent will develop a SOPs for managing the spread of COVID-19 during project operation. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions.

3.4 Impacts during the decommissioning phase

It is expected that the proposed development will be used for many years to come. However, decommissioning could be in the form of permanent withdrawal from the site or change of use of the site. Demolition of structures is the most critical part of decommissioning as it is associated with a number of impacts that include:

- a) Significant deterioration of the environment within the project site and the surrounding areas through noise and vibrations.
- b) Large quantities of dust and exhaust emissions from the machinery and equipment used in demolition.

Mitigation measures

- a) The following shall be adhered to during the decommissioning process:
 - i) Supervise all decommissioning works at the site especially any demolition of structures.
 - ii) Keep all passages clear at all times.

CHAPTER FOUR: ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

Table 4.1: Proposed environmental and social monitoring plan for the proposed project

Parameter to be monitored	Where to be monitored	How to monitor	Frequency of monitoring	Indicators of performance	Responsibility for monitoring	Estimated Cost (KES)
Construction and operation phase						
Flora and fauna	Site and riparian area	Survey of plant cover	Before and after construction	<ul style="list-style-type: none"> • Percentage of plant cover • State of riparian area 	Contractor	0
Solid wastes	At the site	Assessment of solid wastes	Weekly	<ul style="list-style-type: none"> • Amounts and categories of solid wastes at the site • Reported cases of nuisance as a result of unmanaged solid wastes • Number of waste bins installed • Number of workers/beneficiaries sensitized on waste management 	Contractor	30,000
GBV/SH	Within and outside the site	Audit to confirm compliance with policies against sexual harassment and Code of Conduct	Monthly	<ul style="list-style-type: none"> • Number of cases of GBV/SH 	Contractor	50,000

Parameter to be monitored	Where to be monitored	How to monitor	Frequency of monitoring	Indicators of performance	Responsibility for monitoring	Estimated Cost (KES)
Fire	At and near work site	Fire risk assessment	Weekly	<ul style="list-style-type: none"> • Amount of flammable materials at the site • Number and types of fire suppression and management equipment/measures 	Contractor	50,000
HIV/AIDS and STIs	Within and outside the site	Ensure awareness workshops for project staff and workers on HIV/AIDS and STIs and other communicable diseases are carried out	Monthly	<ul style="list-style-type: none"> • Rate at which dispensed condoms are used up/picked • Number of sensitization meetings on HIV/AIDS and STIs 	Contractor	0
Child abuse and/or child labour	Within and outside the site	Audit to confirm compliance with child protection measures outlined in the project documents	Monthly	Number of cases of child abuse	Contractor	50,000

Parameter to be monitored	Where to be monitored	How to monitor	Frequency of monitoring	Indicators of performance	Responsibility for monitoring	Estimated Cost (KES)
Sexual Exploitation and Abuse (SEA) by project workers against community members	Within and outside the site	Audit to confirm compliance with SEA Action Plan	Monthly	Number of cases of SEA	Contractor	50,000
Risk of spread of COVID-19	Within and outside the site	Audit to confirm compliance with Government of Kenya directives for prevention of COVID-19	Weekly	Reported cases of COVID-19 at the site	Contractor	50,000
Incidents and accidents	At the site	Assessment to ensure compliance with occupational health and safety management	Weekly	Number of incidents and accidents at the site	Contractor	50,000
Sanitary conveniences	At the site	Assessment to ensure presence of sanitary facilities	Before commencement of construction	Number and state of sanitary facilities	Contractor	0
Exhaust fumes and dust	At work site	Inspection	During construction	Reported incidences of air pollution	Contractor	20,000

Parameter to be monitored	Where to be monitored	How to monitor	Frequency of monitoring	Indicators of performance	Responsibility for monitoring	Estimated Cost (KES)
Protective equipment	At work site	Inspection	Unannounced inspections during work	<ul style="list-style-type: none"> • Number of PPEs procured • Number or proportion of workers with requisite PPEs 	Contractor	5,000
Risks of animals and people drowning in the ponds	At the site	Observations	Daily	Number of reported cases of drowning in the fishponds	Fisheries dept and community	0
Sediment disposal	Riparian area	Observation	Every week especially after stormy days	Volumes of silt deposits at the streams	Fisheries dept and community	5,000
HIV/AIDS and STIs	Within and outside the site	Ensure awareness workshops for project staff and workers on HIV/AIDS and STIs and other communicable diseases are carried out	Monthly	<ul style="list-style-type: none"> • Rate at which dispensed condoms are used up/picked • Number of sensitization meetings on HIV/AIDS and STIs 	Fisheries dept and community	0
Child abuse and/or child labour	Within and outside the site	Audit to confirm compliance with child protection measures outlined in the project documents	Monthly	Number of cases of child abuse	social services Fisheries dept and community	50,000

Parameter to be monitored	Where to be monitored	How to monitor	Frequency of monitoring	Indicators of performance	Responsibility for monitoring	Estimated Cost (KES)
Sexual Exploitation and Abuse (SEA) by project workers against community members	Within and outside the site	Audit to confirm compliance with SEA Action Plan	Monthly	Number of cases of SEA	Health dept. Fisheries dept and community	50,000
Risk of spread of COVID-19	Within and outside the site	Audit to confirm compliance with Government of Kenya directives for prevention of COVID-19	Weekly	Reported cases of COVID-19 at the site	Fisheries dept and community	50,000
Incidents and accidents	At the site	Assessment to ensure compliance with occupational health and safety management	Weekly	Number of incidents and accidents at the site	Dept of fisheries and community	50,000

CHAPTER FIVE: CONCLUSION

5.1 Conclusion

The proposed development will have numerous positive impacts as has been outlined in this report. The anticipated positive impacts of the proposed project include creation of employment opportunities; demand for locally available construction materials; improved infrastructure through development of foot paths. The anticipated negative impacts of the proposed project include clearance of flora and interference with fauna; soil compaction and increased run-off and associated siltation; solid wastes; increased traffic flow; death, predation and theft of fish and excessive fertilization of fishponds; creation of vector and rodents breeding grounds; risks of animals and people drowning in the ponds; contamination of fishpond water and environmental pollution; gender based violence and sexual harassment (GBV/SH); sexual exploitation and abuse by project workers against community members; risk of Increased incidences of HIV/AIDS and STIs; grievances; child abuse; risk of increased spread of COVID-19 at work sites; and risk of Spread of COVID-19 amongst community members during consultations. The negative environmental and social impacts that will result from establishment of the project will be mitigated with the options provided for in this report.

The report concludes that if all the suggested mitigation measures and the above recommendations as indicated in the proposed environmental and social management and monitoring plans are implemented, then the proposed project will not adversely impact on the environment. It is also clear that the Proponent has actively involved the key neighbourhood stakeholders and these stakeholders did not object to the implementation of the development. The project has sufficient public support.

REFERENCES

1. Kenya gazette supplement Acts 2000, Environmental Management and Coordination Act Number 8 of 1999. Government printer, Nairobi
2. Kenya gazette supplement Acts Land Planning Act (Cap. 303) government printer, Nairobi
3. Kenya gazette supplement Acts County government Act, 2012 ,government printer, Nairobi
4. Kenya gazette supplement Acts Penal Code Act (Cap. 63) government printer, Nairobi
5. Kenya gazette supplement Acts Physical Planning Act, 1999 government printer, Nairobi
6. Kenya gazette supplement Acts Public Health Act (Cap. 242) government printer, Nairobi
7. Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations 2003. Government printer, Nairobi
8. Kenya gazette supplement Acts Water Act, 2016, Government Printers, Nairobi
9. Kenya gazette supplement number 69, Environmental Management and Coordination (Waste management) Regulations, 2006, Government printer, Nairobi
10. Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009, government printer, Nairobi
11. Busia County Integrated Development Plan 2

ANNEXES

Annex 1: Environmental & Screening Checklist


Annex 12A: Environmental and Social screening Check list
ESM Sub-projects Screening Checklist (Prototype)
 (Sub-projects screening process by benefitting communities/Agencies)
Section A: Background information

Name of County Busia
 Name of CPCU/Researcher Samuel Omyo
 Sub-project location Nitajyas sub-County
 Name of CBO/Institution Burumba Community
 Postal Address:.....
 Contact Person..... Cell phone:.....
 Sub-project name Nitajyas Aquaculture Park with RAS
 Estimated cost (Kshs.).....
 Approximate size of land area available for the sub-project 2 Acres
 Objectives of the sub project.....
Increase fish production
Increase farmer income
 Activities/enterprises undertaken Fish ponds, RAS (Spawning Community Participation)
 How was the sub-project chosen?.....
 Expected sub project duration: 6 Months

Section B: Environmental Issues

Will the sub-project:	Yes	No
Create a risk of increased soil erosion?	✓	
Create a risk of increased deforestation?		✓
Create a risk of increasing any other soil degradation soil degradation?		✓
Affect soil salinity and alkalinity?	✓	
Divert the water resource from its natural course/location?		✓
Cause pollution of aquatic ecosystems by sedimentation and agro-chemicals, oil spillage, effluents, etc.?	✓	
Introduce exotic plants or animals?		
Involve drainage of wetlands or other permanently flooded areas?	✓	
Cause poor water drainage and increase the risk of water-related diseases such as malaria?	✓	
Reduce the quantity of water for the downstream users?		✓
Result in the lowering of groundwater level or depletion of groundwater?		✓
Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater?		✓
Reduce various types of livestock production?		✓
Affect any watershed?		✓
Focus on Biomass/Bio-fuel energy generation?		✓

Annex 2: Proof of Land Ownership


REPUBLIC OF KENYA
THE LAND REGISTRATION ACT
(No. 3 of 2012, section 108)
THE REGISTERED LAND ACT
(Chapter 300) (REPEALED)

Title Deed

Title Number BUSIAYO/MUNDIKA/924

Approximate Area 0.38.72=HA

Registry Map Sheet No. 4


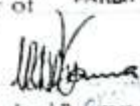
This is to certify that AGRICULTURAL TRAINING CENTRE

is (are) now registered as the absolute proprietor(s) of the land comprised in the above-mentioned title, subject to the entries in the register relating to the land and to such of the overriding interests set out in section 28 of the Land Registration Act (No. 3 of 2012) as may for the time being subsist and affect the land.

GIVEN under my hand and the seal of the

BUSIA District Land Registry

this 1ST day of MARCH 2015



Land Registrar

Annex 3: Sample Public Consultations Questionnaires

PUBLIC PARTICIPATION

PROPOSED AQUACULTURE PARK PROJECT IN BURUMBA AREA

Kenya Climate Smart Agriculture Project (KCSAP) has commissioned an Environmental, Social, Management and Monitoring Plan Report for the proposed Aquaculture park project with Recirculating Aquaculture Systems (RAS) at Burumba area, Matayos Sub County, Bura County. The requirements of EMCA of 1999 section 5B requires that environmental assessment and public participation be undertaken. We are seeking your views as stakeholders regarding the proposed project to enable us compile EIA project report for submission to National Environment Management Authority (NEMA).

NAME: Bruce Mangala

ADDRESS: 6, Bugeji

1. For how long have you been residing in this area
19 years
2. What positive impacts do you foresee from the proposed project
Food availability
Employment creation.
3. What adverse environmental/social impacts according to your opinion will arise from the project?
Dust pollution during construction.
Vegetation loss
4. What remedies do you think may mitigate these negative impacts if any?
Observe convenient working hours.
Plant trees on land left after establish.
5. Do you have any other information?
No idont.

Annex 4: Expert's Practicing License

FORM 1

01/12/20



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No: NEMA/EIA/TRPL/14928
Application Reference No: NEMA/EIA/EL/19249

M/S **Chirande Dennis**
(individual or firm) of address
P.O. Box 140-50400 Busia

is licensed to practice in the
capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**
registration number **6511**
in accordance with the provision of the Environmental Management and Coordination Act Cap
387.

Issued Date: **3/5/2021** Expiry Date: **12/31/2021**

Signature.....
(Seal)
Director General
The National Environment Management
Authority



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